

Claims

What is claimed is:

1. A method for processing an input speech signal during presentation of an output audio signal, the method comprising steps of:
- detecting a start of the input speech signal;
 - determining, relative to the output audio signal, an input start time of the start of the input speech signal; and
 - providing the input start time for use in responding to the input speech signal.
2. The method of claim 1, wherein the input start time comprises any one of a time stamp relative to a temporal context of the output audio signal, a sample index relative to a sample context of the output audio signal, and a frame index relative to a frame context of the output audio signal.
3. A computer-readable medium having computer-executable instructions for performing the steps recited in claim 1.

4. A method for processing an input speech signal during presentation of an output audio signal,
the method comprising steps of:

detecting the input speech signal;

determining an identification corresponding to the output audio signal; and

providing the identification for use in responding to the input speech signal.

5. A computer-readable medium having computer-executable instructions for performing the
steps recited in claim 4.

6. In a subscriber unit in wireless communication with an infrastructure comprising a speech recognition server, the subscriber unit comprising a speaker and a microphone, wherein the speaker provides an output audio signal and the microphone provides an input speech signal, a method for processing the input speech signal, the method comprising steps of:

detecting a start of the input speech signal during presentation of the output speech signal;
determining, relative to the output audio signal, an input start time of the start of the input speech signal; and

providing the input start time to the speech recognition server as a control parameter.

7. The method of claim 6, further comprising a step of:

receiving at least one information signal from the speech recognition server based at least in part upon the input start time.

8. The method of claim 6, the step of determining the onset marker further comprising steps of:
determining the input start time no earlier than a start of the output audio signal and no later than a start of a subsequent output audio signal.

9. The method of claim 6, wherein the input start time is any one of a time stamp relative to a temporal context of the output audio signal, a sample index relative to a sample context of the output audio signal, and a frame index relative to a frame context of the output audio signal.

10. The method of claim 6, wherein the output audio signal comprises a speech signal provided by the infrastructure.

11. The method of claim 6, wherein the output audio signal comprises a speech signal synthesized by the subscriber unit in response to control signaling provided by the infrastructure.

12. The method of claim 6, further comprising steps of:

analyzing the input speech signal to provide a parameterized speech signal;

providing the parameterized speech signal to the speech recognition server; and
receiving at least one information signal from the speech recognition server based at least in part upon the input start time and the parameterized speech signal.

13. In a subscriber unit in wireless communication with an infrastructure comprising a speech recognition server, the subscriber unit comprising a speaker and a microphone, wherein the speaker provides an output audio signal and the microphone provides an input speech signal, a method for processing the input speech signal, the method comprising steps of:

detecting the input speech signal during presentation of the output audio signal;
determining an identification corresponding to the output audio signal; and
providing the identification to the speech recognition server as a control parameter.

14. The method of claim 13, further comprising a step of:

receiving at least one information signal from the speech recognition server based at least in part upon the identification.

15. The method of claim 13, wherein the output audio signal comprises a speech signal provided by the infrastructure.

16. The method of claim 13, wherein the output audio signal comprises a speech signal synthesized by the subscriber unit in response to control signaling provided by the infrastructure.

17. The method of claim 13, further comprising steps of:

analyzing the input speech signal to provide a parameterized speech signal;
providing the parameterized speech signal to the speech recognition server; and
receiving at least one information signal from the speech recognition server based at least in part upon the identification and the parameterized speech signal.

18. In a speech recognition server forming a part of an infrastructure that wirelessly communicates with one or more subscriber units, a method for providing information signals to a subscriber unit of the one or more subscriber units, the method comprising steps of:

causing an output audio signal to be presented at the subscriber unit;
receiving, from the subscriber unit, at least an input start time corresponding to a start of an input speech signal relative to the output audio signal at the subscriber unit; and
responsive at least in part to the input start time, providing the information signals to the subscriber unit.

19. The method of claim 18, wherein the input start time is any one of a time stamp relative to a temporal context of the output audio signal, a sample index relative to a sample context of the output audio signal, and a frame index relative to a frame context of the output audio signal.

20. The method of claim 18, wherein the step of causing the output audio signal further comprises a step of:

providing a speech signal to the subscriber unit.

21. The method of claim 18, the step of providing the information signals further comprising a step of:

directing the information signals to the subscriber unit, wherein the information signals control operation of the subscriber unit.

22. The method of claim 18, wherein the subscriber unit is coupled to at least one device, the step of providing the information signals further comprising a step of:

directing the information signals to the at least one device, wherein the information signals control operation of the at least one device.

23. The method of claim 18, wherein the step of causing the output audio signal further comprises a step of:

25. In a speech recognition server forming a part of an infrastructure that wirelessly communicates with one or more subscriber units, a method for providing information signals to a subscriber unit of the one or more subscriber units, the method comprising steps of:

causing an output audio signal to be presented at the subscriber unit, wherein the output audio signal has a corresponding identification;

receiving, from the subscriber unit, at least the identification when an input speech signal is detected at the subscriber unit during presentation of the output audio signal; and

responsive at least in part to the identification, providing the information signals to the subscriber unit.

26. The method of claim 25, wherein the step of causing the output audio signal further comprises a step of:

providing a speech signal to the subscriber unit.

27. The method of claim 25, the step of providing the information signals further comprising a step of:

directing the information signals to the subscriber unit, wherein the information signals control operation of the subscriber unit.

28. The method of claim 25, wherein the subscriber unit is coupled to at least one device, the step of providing the information signals further comprising a step of:

directing the information signals to the at least one device, wherein the information signals control operation of the at least one device.

29. The method of claim 25, wherein the step of causing the output audio signal further comprises a step of:

providing control signaling to the subscriber unit, wherein the control signaling causes the subscriber unit to synthesize a speech signal as the output audio signal.

30. The method of claim 25, further comprising steps of:
receiving a parameterized speech signal corresponding to the input speech signal; and
responsive at least in part to the identification and the parameterized speech signal, providing
the information signals to the subscriber unit.

31. A subscriber unit that wirelessly communicates with an infrastructure comprising a speech recognition server, the subscriber unit comprising a speaker and a microphone, wherein the speaker provides an output audio signal and the microphone provides an input speech signal, the subscriber unit further comprising:

means for detecting a start of the input speech signal;

means for determining, relative to the output audio signal, an input start time of the start of the input speech signal; and

means for providing the input start time to the speech recognition server as a control parameter.

32. The subscriber unit of claim 31, further comprising:

means for receiving at least one control signal from the speech recognition server based at least in part upon the input start time.

33. The subscriber unit of claim 32, further comprising:

means for analyzing the input speech signal to provide a parameterized speech signal,

wherein the means for providing further function to provide the parameterized speech signal to the speech recognition server, and the means for receiving further function to receive the at least one control signal from the speech recognition server based at least in part upon the input start time and the parameterized speech signal.

34. The subscriber unit of claim 31, wherein the means for determining the input start time function to determine the input start time no earlier than a start of the output audio signal and no later than a start of a subsequent output audio signal.

35. The subscriber unit of claim 31, wherein the input start time is any one of a time stamp relative to a temporal context of the output audio signal, a sample index relative to a sample context of the output audio signal, and a frame index relative to a frame context of the output audio signal.

36. The subscriber unit of claim 31, further comprising:

means for receiving, from the infrastructure, a speech signal to be provided as the output audio signal.

37. The subscriber unit of claim 31, further comprising:

means for receiving, from the infrastructure, control signaling regarding the output audio signal; and

means for synthesizing a speech signal as the output audio signal in response to the control signaling.

38. A subscriber unit that wirelessly communicates with an infrastructure comprising a speech recognition server, the subscriber unit comprising a speaker and a microphone, wherein the speaker provides an output audio signal and the microphone provides an input speech signal, the subscriber unit further comprising:

means for detecting the input speech signal during presentation of the output audio signal;
means for determining an identification corresponding to the output audio signal; and
means for providing the identification to the speech recognition server as a control parameter.

39. The subscriber unit of claim 38, further comprising:

means for receiving at least one control signal from the speech recognition server based at least in part upon the identification.

40. The subscriber unit of claim 39, further comprising:

means for analyzing the input speech signal to provide a parameterized speech signal,
wherein the means for providing further function to provide the parameterized speech signal to the speech recognition server, and the means for receiving further function to receive the at least one control signal from the speech recognition server based at least in part upon the identification and the parameterized speech signal.

41. The subscriber unit of claim 38, further comprising:

means for receiving, from the infrastructure, a speech signal to be provided as the output audio signal.

42. The subscriber unit of claim 38, further comprising:

means for receiving, from the infrastructure, control signaling regarding the output audio signal; and

means for synthesizing a speech signal as the output audio signal in response to the control signaling.

43. A speech recognition server forming a part of an infrastructure that wirelessly communicates with one or more subscriber units, the speech recognition server further comprising:

means for causing an output audio signal to be presented at a subscriber unit of the one or more subscriber units;

means for receiving, from the subscriber unit, at least an input start time corresponding to a start of an input speech signal relative to the output audio signal at the subscriber unit; and

means, responsive at least in part to the input start time, for providing information signals to the subscriber unit.

44. The speech recognition server of claim 43, wherein the input start time is any one of a time stamp relative to a temporal context of the output audio signal, a sample index relative to a sample context of the output audio signal, and a frame index relative to a frame context of the output audio signal.

45. The speech recognition server of claim 43, wherein the means for providing the information signals further functions to direct the information signals to the subscriber unit, wherein the information signals control operation of the subscriber unit.

46. The method of claim 43, wherein the subscriber unit is coupled to at least one device, and wherein the means for providing the information signals further functions to direct the information signals to the at least one device, wherein the information signals control operation of the at least one device.

47. The speech recognition server of claim 43, wherein the means for causing the output audio signal further function to provide a speech signal to be provided as the output audio signal.

48. The speech recognition server of claim 43, wherein the means for causing the output audio signal further function to provide control signaling to the subscriber unit, wherein the control signaling causes the subscriber unit to synthesize a speech signal as the output audio signal.

49. The speech recognition server of claim 43, the means for receiving further functioning to receive a parameterized speech signal corresponding to the input speech signal, and the means for providing further functioning to provide the information signals to the subscriber unit responsive at least in part to the input start time and the parameterized speech signal.

49. The speech recognition server of claim 43, the means for receiving further functioning to receive a parameterized speech signal corresponding to the input speech signal, and the means for providing further functioning to provide the information signals to the subscriber unit responsive at least in part to the input start time and the parameterized speech signal.

50. A speech recognition server forming a part of an infrastructure that wirelessly communicates with one or more subscriber units, the speech recognition server further comprising:

means for causing an output audio signal to be presented at a subscriber unit of the one or more subscriber units, wherein the output audio signal has a corresponding identification;

means for receiving, from the subscriber unit, at least the identification when an input speech signal is detected at the subscriber unit during presentation of the output audio signal; and

means, responsive at least in part to the identification, for providing information signals to the subscriber unit.

51. The speech recognition server of claim 50, wherein the means for causing the output audio signal further function to provide a speech signal to be provided as the output audio signal.

52. The speech recognition server of claim 50, wherein the means for causing the output audio signal further function to provide control signaling to the subscriber unit, wherein the control signaling causes the subscriber unit to synthesize a speech signal as the output audio signal.

53. The speech recognition server of claim 50, the means for receiving further functioning to receive a parameterized speech signal corresponding to the input speech signal, and the means for providing further functioning to provide the information signals to the subscriber unit responsive at least in part to the input start time and the parameterized speech signal.

54. The speech recognition server of claim 50, wherein the means for providing the information signals further functions to direct the information signals to the subscriber unit, wherein the information signals control operation of the subscriber unit.

55. The method of claim 50, wherein the subscriber unit is coupled to at least one device, and wherein the means for providing the information signals further functions to direct the information signals to the at least one device, wherein the information signals control operation of the at least one device.